WHAT IS CLAIMED IS:

1. A system for establishing an Internet Protocol (IP) connection with a terminating node, the system comprising:

an originating node capable of initiating communication with the terminating

5 node; and

an intermediate node located between the originating node and the terminating node,

wherein the originating node is capable of initiating communication with the terminating node in a manner based upon at least one parameter for communication with

10 at least one of the intermediate node and the terminating node, wherein the originating node is capable of initiating communication by one of requesting communication with the terminating node via the intermediate node, and notifying the terminating node of incoming data independent of the intermediate node, wherein one of the originating node and the intermediate node is capable of notifying the terminating node of incoming data

15 when the originating node initiates communication by requesting communication with the terminating node via the intermediate node, and wherein the terminating node, upon being notified of incoming data, is capable of registering with the intermediate node to thereby enable IP communication between the originating node and the terminating node via the intermediate node.

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2. A system according to Claim 1, wherein the originating node is capable of notifying the terminating node of incoming data further in accordance with a non-IP-based communication technique when the originating node initiates communication by notifying the terminating node of incoming data, and wherein one of the originating node

25 and the intermediate node is capable of notifying the terminating node of incoming data further in accordance with a non-IP-based communication technique when the originating node initiates communication by requesting communication with the terminating node via the intermediate node.

30 3. A system according to Claim 2, wherein non-IP based communication comprises at least one of oral communication, text messaging, radio frequency (RF)

communication, short messaging service (SMS) communication, multimedia messaging service (MMS) communication, and instant messaging.

4. A system according to Claim 1, wherein the originating node is capable of notifying the terminating node of incoming data further in accordance with at least one wireless communication technique when the originating node initiates communication by notifying the terminating node of incoming data, and wherein one of the originating node and the intermediate node is capable of notifying the terminating node of incoming data further in accordance with the at least one wireless communication technique when the originating node initiates communication by requesting communication with the terminating node via the intermediate node.

5. A system according to Claim 1, wherein the originating node is capable of initiating communication, and thereafter communicating, with the terminating node in accordance with a plurality of different communication techniques.

6. A system according to Claim 1, wherein the originating node is capable of requesting communication with the terminating node via the intermediate node sending a domain name service (DNS) query to at least one of a plurality of DNS servers to thereby trigger the at least one of a plurality of DNS servers to communicate with the intermediate node to request communication with the terminating node.

7. A system according to Claim 6, wherein the originating node is capable of sending the DNS query to a first DNS server, wherein a second DNS server communicates with the intermediate node to request communication with the terminating node, and wherein the second DNS server comprises one of the first DNS server and a DNS server different from the first DNS server.

8. A system according to Claim 1, wherein the intermediate node is capable of establishing a tunnel with the terminating node in response to the terminating node registering with the intermediate node,

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and wherein the originating node is capable of communicating with the terminating node at least partially via the tunnel.

9. A system according to Claim 8, wherein the intermediate node is further capable of assigning a public IP address to the terminating node,

and wherein the originating node is capable of communicating with the terminating node by sending data based upon the public IP address of the terminating node assigned by the intermediate node.

10. A system according to Claim 8, wherein the intermediate node is capable of establishing the tunnel based upon a registration message from the terminating node via at least one of a network address translator (NAT) and a firewall (FW) located between the intermediate node and the terminating node,

and wherein the originating node is capable of communicating with the terminating node at least partially via the tunnel in a manner independent of the at least one of the NAT and the FW.

11. A system according to Claim 1, wherein the terminating node is capable of registering with the intermediate node such that the intermediate node creates a registration entry that includes a public IP address assigned to the terminating node,

and wherein the originating node is capable of communicating with the terminating node such that the intermediate node operates as a proxy based upon the registration entry.

12. A system according to Claim 11, wherein the public IP address assigned to the terminating node comprises a public IP address assigned to the terminating node by a network address translator (NAT), wherein the intermediate node is capable of receiving data from the originating node, and forwarding the data based upon the public IP address such that the NAT is capable of transforming the public IP address assigned to the terminating node into a private IP address associated with the terminating node, and

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thereafter forwarding the data from the NAT to the terminating node based upon the private IP address of the terminating node.

13. A system according to Claim 1, wherein the originating node comprises one of a mobile terminal and a fixed terminal, and wherein one of the mobile terminal and fixed terminal is capable of notifying the terminating node of incoming data.

14. A system according to Claim 1, wherein one of the originating node and the intermediate node comprises a Session Initiation Protocol (SIP) client, and wherein the SIP client is capable of communicating with a SIP proxy to thereby trigger the SIP proxy to notify the terminating node of incoming data.

15. A system according to Claim 1 further comprising:
at least one of a network address translator (NAT) and a firewall (FW) located between the intermediate node and the terminating node,
wherein one of the originating node and the intermediate node is capable of communicating with the at least one of the NAT and FW to thereby trigger the at least one of the NAT and FW to notify the terminating node of incoming data.

16. A system according to Claim 15, wherein one of the originating node and the intermediate node is capable of communicating with the at least one of the NAT and FW such that the at least one of the NAT and FW communicates with a network gateway support node to thereby trigger the network gateway support node to notify the terminating node of incoming data.

17. A system according to Claim 1, wherein one of the originating node and the intermediate node is capable of communicating with another network node to thereby trigger the other network node to notify the terminating node of incoming data.

18. A method of establishing an Internet Protocol (IP) connection with a terminating node, the method comprising:

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receiving a notification of incoming data at the terminating node from one of an originating node and an intermediate node located between the originating node and the terminating node; and

registering the terminating node with the intermediate node in response to receiving the notification at the terminating node to thereby enable IP communication between the originating node and the terminating node via the intermediate node.

19. A method according to Claim 18, wherein notifying the terminating node comprises notifying the terminating node of incoming data further in accordance with a non-IP-based communication technique.

20. A method according to Claim 19, wherein notifying the terminating node comprises notifying the terminating node of incoming data further in accordance with at least one of oral communication, text messaging, radio frequency (RF) communication, short messaging service (SMS) communication, multimedia messaging service (MMS) communication, and instant messaging.

21. A method according to Claim 18, wherein notifying the terminating node comprises notifying the terminating node of incoming data further in accordance with at least one wireless communication technique.

22. A method according to Claim 18 further comprising:

communicating between the originating node and the terminating node, wherein notifying the terminating node and communicating between the originating node and terminating node occur in accordance with a plurality of different communication techniques.

23. A method according to Claim 18 further comprising:

requesting communication with the terminating node from the originating node via the intermediate node by sending a domain name service (DNS) query to at least one of a plurality of DNS servers to thereby trigger the at least one of a plurality of DNS

servers to communicate with the intermediate node such that the intermediate node notifies the terminating node of incoming data.

24.   A method according to Claim 23, wherein requesting communication comprises requesting communication with the terminating node from the originating node via the intermediate node by sending a DNS query to a first DNS server to thereby trigger a second DNS server to communicate with the intermediate node such that the intermediate node notifies the terminating node of incoming data, and wherein the second DNS server comprises one of the first DNS server and a DNS server different from the first DNS server.

25.   A method according to Claim 18 further comprising:
establishing a tunnel between the intermediate node and the terminating node in response to registering the terminating node with the intermediate node; and
communicating between the originating node and the terminating node at least partially via the tunnel.

26.   A method according to Claim 25, wherein registering the terminating node includes assigning a public IP address to the terminating node, and wherein communicating comprises sending data from the originating node to the terminating node based upon the public IP address assigned to the terminating node.

27.   A method according to Claim 25, wherein establishing a tunnel comprises establishing a tunnel based upon a registration message from the terminating node via at least one of a network address translator (NAT) and a firewall (FW) located between the intermediate node and the terminating node,
and wherein communicating comprises communicating between the originating node and the terminating node at least partially via the tunnel in a manner independent of the at least one of the NAT and the FW.

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28.   A method according to Claim 18, wherein registering the terminating node comprises registering the terminating node such that the intermediate node creates a registration entry that includes a public IP address assigned to the terminating node, and wherein the method further comprises:

5   communicating between the originating node and the terminating node via the intermediate node such that the intermediate node operates as a proxy based upon the registration entry.

29.   A method according to Claim 28, wherein the public IP address assigned

10   to the terminating node comprises a public IP address assigned to the terminating node by a network address translator (NAT), and wherein communicating comprises:
     receiving data from the originating node at the intermediate node; and
     forwarding the data based upon the public IP address such that the NAT is capable of transforming the public IP address assigned to the terminating node into a

15   private IP address associated with the terminating node, and thereafter forwarding the data from the NAT to the terminating node based upon the private IP address of the terminating node.

30.   A method according to Claim 18, wherein the originating node comprises

20   one of a mobile terminal and a fixed terminal, and wherein receiving a notification comprises receiving a notification from one of the mobile terminal and fixed terminal.

31.   A method according to Claim 18, wherein one of the originating node and the intermediate node comprises a Session Initiation Protocol (SIP) client, and wherein

25   receiving a notification comprises receiving a notification from a SIP proxy in response to the SIP proxy being triggered by the SIP client to notify the terminating node of incoming data.

32.   A method according to Claim 18, wherein receiving a notification

30   comprises receiving a notification from at least one of a network address translator (NAT) and a firewall (FW) located between the intermediate node and the terminating

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node, and wherein receiving a notification comprises receiving a notification in response to the at least one of the NAT and FW being triggered by one of the originating node and the intermediate node to notify the terminating node of incoming data.

5   33.   A method according to Claim 32, wherein receiving a notification comprises receiving a notification from a network gateway support node in response to the network gateway support node being triggered by at least one of the NAT and FW to notify the terminating node of incoming data.

10   34.   A method according to Claim 18, wherein receiving a notification comprises receiving a notification from another network node in response to the other network node being triggered by one of the originating node and the intermediate node to notify the terminating node of incoming data.

15   35.   A terminal comprising:
       a controller capable of receiving a notification of incoming data from one of an originating node and an intermediate node located between the originating node and the terminal, wherein the controller is also capable of registering the terminal with the intermediate node in response to receiving the notification to thereby enable IP
20   communication between the originating node and the terminal via the intermediate node.

       36.   A terminal according to Claim 35, wherein the controller is capable of receiving the notification further in accordance with a non-IP-based communication technique.
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       37.   A terminal according to Claim 36, wherein the controller is capable of receiving the notification further in accordance with at least one of text messaging, radio frequency (RF) communication, short messaging service (SMS) communication, multimedia messaging service (MMS) communication, and instant messaging.
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38.   A terminal according to Claim 35, wherein the controller is capable of receiving the notification further in accordance with at least one wireless communication technique.

5   39.   A terminal according to Claim 35, wherein the controller is further capable of communicating with the originating node, and wherein the controller is capable of receiving the notification and communicating with the originating node in accordance with a plurality of different communication techniques.

10   40.   A terminal according to Claim 35, wherein the controller is capable of receiving the notification in response to the originating node requesting communication with the terminal via the intermediate node by sending a domain name service (DNS) query to at least one of a plurality of DNS servers to thereby trigger the at least one of a plurality of DNS servers to communicate with the intermediate node such that the
15   intermediate node sends the notification to the terminal.

41.   A terminal according to Claim 40, wherein the controller is capable of receiving the notification in response to the originating node requesting communication comprises requesting communication with the terminating node via the intermediate node
20   by sending the DNS query to a first DNS server to thereby trigger a second DNS server to communicate with the intermediate node such that the intermediate node notifies the terminating node of incoming data, and wherein the second DNS server comprises one of the first DNS server and a DNS server different from the first DNS server.

25   42.   A terminal according to Claim 35, wherein the controller is capable of registering the terminal such that the intermediate node establishes a tunnel between the intermediate node and the terminal in response to registering the terminal with the intermediate node, and wherein the controller is capable of communicating with the originating node at least partially via the tunnel.

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43. A terminal according to Claim 42, wherein the controller is capable of registering the terminal such that the intermediate node assigns a public IP address to the terminal, and wherein the controller is capable of receiving data sent from the originating node to the terminal based upon the public IP address assigned to the terminal.

44. A terminal according to Claim 42, wherein the controller is capable of sending a registration message to the intermediate node via at least one of a network address translator (NAT) and a firewall (FW) located between the intermediate node and the terminal to thereby register the terminal, and wherein the controller is capable of communicating with the originating node at least partially via the tunnel in a manner independent of the at least one of the NAT and the FW.

45. A terminal according to Claim 35, wherein the controller is capable of registering the terminal such that the intermediate node creates a registration entry that includes a public IP address assigned to the terminal, and wherein the controller is capable of communicating with the originating node via the intermediate node such that the intermediate node operates as a proxy based upon the registration entry.

46. A terminal according to Claim 45, wherein the public IP address assigned to the terminal comprises a public IP address assigned to the terminal by a network address translator (NAT), and wherein the controller is capable of communicating with the originating node such that the intermediate node receives data from the originating node, and forwards the data based upon the public IP address such that the NAT is capable of transforming the public IP address assigned to the terminal into a private IP address associated with the terminal, and thereafter forwarding the data from the NAT to the controller based upon the private IP address of the terminal.

47. A terminal according to Claim 35, wherein the originating node comprises one of a mobile terminal and a fixed terminal, and wherein the controller is capable of receiving the notification from one of the mobile terminal and fixed terminal.

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48.   A terminal according to Claim 35, wherein one of the originating node and the intermediate node comprises a Session Initiation Protocol (SIP) client, and wherein the controller is capable of receiving the notification from a SIP proxy in response to the SIP proxy being triggered by the SIP client to notify the terminal of incoming data.

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49.   A terminal according to Claim 35, wherein the controller is capable of receiving the notification from at least one of a network address translator (NAT) and a firewall (FW) located between the intermediate node and the terminal, and wherein the controller is capable of receiving the notification in response to the at least one of the
10   NAT and FW being triggered by one of the originating node and the intermediate node to notify the terminal of incoming data.

50.   A terminal according to Claim 49, wherein the controller is capable of receiving the notification from a network gateway support node in response to the
15   network gateway support node being triggered by at least one of the NAT and FW to notify the terminal of incoming data.

51.   A terminal according to Claim 35, wherein the controller is capable of receiving the notification from another network node in response to the other network
20   node being triggered by one of the originating node and the intermediate node to notify the terminal of incoming data.

52.   A system for establishing an Internet Protocol (IP) connection comprising:
        a network address translator (NAT) located between an originating node and a
25   terminating node, wherein the NAT is capable of receiving a communication request from a network node, and in response to the connection request, notifying the terminating node of incoming data such that the terminating node registers with an intermediate node located between the originating node and the NAT to thereby enable IP communication between the originating node and the terminating node via the intermediate node.

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53.   A system according to Claim 52, wherein the NAT is capable of notifying the terminating node via a network gateway support node of a network including the terminating node.

54.   A system according to Claim 52, wherein the NAT is capable of receiving the communication request from one of the originating node and the intermediate node.

55.   A system according to Claim 52 further comprising:

an intermediate node capable of establishing a tunnel with the terminating node in response to the terminating node registering with the intermediate node such that the originating node is capable of communicating with the terminating node at least partially via the tunnel.

56.   A system according to Claim 55, wherein the intermediate node is further capable of assigning a public IP address to the terminating node such that the originating node is capable of communicating with the terminating node by sending data based upon the public IP address of the terminating node assigned by the intermediate node.

57.   A system according to Claim 55, wherein the intermediate node is capable of establishing the tunnel based upon a registration message from the terminating node via the NAT, and wherein the intermediate node is capable of establishing a tunnel with the terminating node to permit the originating node to communicate with the terminating node at least partially via the tunnel in a manner independent of the NAT.

58.   A system according to Claim 54 further comprising:

an intermediate node capable of receiving a registration message from the terminating node, and thereafter creating a registration entry that includes a public IP address assigned to the terminating node, wherein originating node is capable of communicating with the terminating node such that , and wherein the intermediate node is capable of operating as a proxy during communication between the originating node and the terminating node based upon the registration entry.

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59.   A terminating node comprising;

a receiving means for receiving a notification of incoming data from one of an originating node and an intermediate node located between the originating node and the terminating node; and

a registering means for registering the terminating node with the intermediate node in response to the receiving means receiving the notification to thereby enable Internet Protocol (IP) communication between the originating node and the terminating node via the intermediate node.

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